UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

DATE: June 22, 2000

SUBJECT: Master Metals Site-Modified Cap

FROM: Anthony H. Holoska, P.E.
Environmental Engineer

TO: Gwendolyn Massenburg
Remedial Project Manager

Per your request, I looked into the technical aspects of a modified cap for the Master Metals site that would allow the site to be reused after the cleanup by a lumber company for the surface storage of materials.

1. Examples of Asphalt caps at Superfund sites

In order to get an idea of how asphalt caps have been used at other Superfund sites, I did an internet search on the subject. The sites listed below are the partial results of that search. A copy of the internet printouts are attached.

a. NL Industries /Taracorp/Golden Auto in Minnesota was an old lead smelter site. Cleanup of the site included the removal of contaminated soils and the installation of an asphalt cap.

b. Halby Chemical Company in New Castle, Delaware utilized capping the residuals area with an asphalt cap.

c. The Department of the Navy installed a four-inch thick asphalt cap over an 11000 square foot area of the Naval Security Group Activity in Puerto Rico.

d. US EPA conducted a cleanup at Tri-County Landfill in Elgin, Illinois including an asphalt cap on the Elgin-Wayne portion of the site.

2. Configuration of an asphalt cap

I spoke with Dave Petrovski, senior geologist in the Office of RCRA. From bottom to top, the asphalt cap would probably consist of: Above the existing concrete would be placed the offsite and onsite consolidated wastes soils. Above the waste would be a layer of 6-12 inches of compacted clay. On top of the compacted clay, would be the flexible membrane liner (FML). Above the FML would be at least 1 foot of compacted soil. Above the soil would be the asphalt. There may be a layer of stones under the asphalt. All of the layers would have to be sufficiently compacted to ensure that the load bearing strength of the asphalt could support the intended use

(lumber company structures). It is very important that the specifications of this cap be reviewed by a geotechnical engineer to ensure it has the necessary loading bearing capacity. In the absence of storm sewers, it is important that the asphalt cap be properly sloped to ensure the runoff of precipitation. Graphically the cap from top to bottom would look like:

Asphalt
Crushed stones under the asphalt
Compacted Soil
Flexible Membrane Liner (FML)
Compacted Clay
Consolidated Contaminated Soils
Existing Concrete

I hope that this is the type of information that you are looking for in order to draft an AOC for this scenario. If I can be of further assistance, please contact me at 6-7503 or via Lotus Notes.

Attachments

EPA United States Environmental Protection Agency **Region 5**

NPL Fact Sheet

NL INDUSTRIES/ TARACORP/ GOLDEN AUTO

MINNESOTA
EPA ID# MND097891634

EPA REGION 5
Hennepin County
St. Louis Park

Other Names:
Northwestern Metal Works
Taracorp Ind.
National Lead Taracorp

5th Congressional District

Last Update: February, 1998

Site Description

The National Lead (NL Industries)/Taracorp/Golden Auto site is located in St. Louis Park, just west of Minneapolis. The site consists of two neighboring properties, one formerly owned by Taracorp, Inc., and the other currently owned by Morris and Harry Golden. Metal refining, fabricating, and associated activities were conducted at the site until 1903, when the secondary lead smelting operation was started. Solid wastes generated by the manufacturing facilities were stored in a slag storage area on-site. Liquid wastes were discharged through process sewers to the municipal sewer system. NL Industries purchased the site in 1928, and operated the lead smelting facility from 1940 until 1979. NL sold the lead smelting operation to Taracorp in 1979. Taracorp continued to operate the smelter until 1981. There are residential areas within ¼-mile of the site. Aquifers beneath the site serve as a primary source of drinking water in the area.

Site Responsibility: This site was being addressed through Federal, State, and potentially responsible parties' actions.

NPL Listing History: Proposed Date: 10/22/81
Final Date: 09/08/83

Threats and Contaminants

As a result of operations at the site, the site soils were contaminated with high concentrations of lead.

Cleanup Progress

Under a Consent Order signed in 1985, NL Industries, Inc. conducted on-site investigations and cleanup activities between 1985 and 1988. This included: restricting access to the site; removing contaminated on-site soils to a federally approved facility and backfilling with clean soils; revegetating the excavated area; cleaning and demolishing several on-site buildings; installation of an asphalt cap; and long-term monitoring of groundwater. The groundwater monitoring has shown no accedence of applicable standards. All construction at the site is complete, and cleanup goals for the site have been fully achieved. In 1996, a Five-Year Review of the remedy concluded that the remedy continues to be protective of human health and the environment. A Notice of Intent to Delete this site from the National Priorities List (NPL) was publish in the Federal Register on April 3, 1998.

Contacts

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Community Involvement Coordinator
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EPA United States Environmental Protection Agency **Superfund**

Record of Decision (ROD) Abstract

ROD Number: EPA/ROD/R03-91/115
ROD Date: 06/28/91

Site: **HALBY CHEMICAL CO** *EPA ID Number:* **DED980830954**
Location: **NEW CASTLE, DE** *Operable Unit:* **01**

Abstract:
THE 14-ACRE HALBY CHEMICAL SITE ENCOMPASSES A CHEMICAL STORAGE FACILITY AND ASSOCIATED WAREHOUSES IN WILMINGTON, NEW CASTLE COUNTY, DELAWARE. LAND USE IN THE AREA IS PRIMARILY INDUSTRIAL. STORM WATER RUNOFF FROM THE SITE GENERALLY FLOWS TOWARD A DRAINAGE DITCH WHICH DISCHARGES INTO THE CHRISTINA RIVER. FROM 1948 TO 1977, THE HALBY CHEMICAL PLANT PROCESS PLANT AREA WAS USED TO PRODUCE SULFUR COMPOUNDS, AND UNTIL 1969, A PORTION OF THE SITE WAS USED TO STORE ARSENIC-CONTAINING PYRITE ORE. FROM 1948 TO 1964, THE PLANT DISCHARGED ALL LIQUIDS INTO AN ADJACENT MARSH OR LAGOON, WHICH DRAINED INTO THE LOBDELL CANAL BEFORE EMPTYING INTO THE CHRISTINA RIVER. FROM 1964 TO 1975, THE PLANT ACID WASTEWATER WAS DISCHARGED TO THE PUBLIC SEWERS. FROM 1975 TO 1977, THE OWNERS PERIODICALLY DIVERTED THE ACID WASTEWATER FLOW FROM THE COUNTY SEWER SYSTEM TO ITS PILOT PLANT, AND THE TREATED WASTEWATER WAS DISCHARGED TO THE LAGOON. IN JULY OF 1977, THE FACILITY WAS ISSUED A NPDES PERMIT TO DISCHARGE COOLING WATER AND EFFLUENT FROM THE PROCESS PLANT TREATMENT PLANT. THE PLANT THEN CLOSED IN AUGUST 1977. SINCE 1977, BRANDYWINE CHEMICAL COMPANY HAS USED THE SITE TO RECEIVE AND DISTRIBUTE BULK CHEMICALS. AS A RESULT OF CITIZEN COMPLAINTS ABOUT LAGOON OVERFLOW, HYDROGEN SULFIDE-LIKE ODORS, AND NUMEROUS SPILLS, A NUMBER OF INVESTIGATIONS WERE CONDUCTED BY THE STATE AND EPA BEGINNING IN 1983, WHICH IDENTIFIED LEAKING DRUMS AND STAINED SOIL. ANALYSES OF SAMPLES TAKEN DURING THIS SITE INVESTIGATION REVEALED VOCS, ORGANICS, METALS, AND OTHER CARCINOGENIC COMPOUNDS IN THE SOIL. THIS RECORD OF DECISION (ROD) ADDRESSES THE FIRST OF TWO OPERABLE UNITS (OUS) AND PROVIDES A FINAL REMEDY FOR SOIL AND DEBRIS IN THE PROCESS PLANT AREA. CONTAMINATION OF AIR, SURFACE WATER, GROUND WATER, AND SEDIMENT IN THE MARSH AND LAGOON AREAS WILL BE ADDRESSED IN A SUBSEQUENT ROD AS OU2. THE PRIMARY CONTAMINANTS OF CONCERN AFFECTING THE SOIL AND DEBRIS ARE VOCS INCLUDING BENZENE, TCE, TOLUENE, AND XYLENES; OTHER ORGANICS INCLUDING PAHS; AND METALS INCLUDING ARSENIC, CHROMIUM, AND LEAD. THE SELECTED REMEDIAL ACTION FOR THIS SITE INCLUDES CONSOLIDATING DEBRIS ONSITE OR DISPOSING OF ALL DEBRIS OFFSITE; EXCAVATING AND STABILIZING THE TOP 6 INCHES OF APPROXIMATELY 10,300 CUBIC YARDS OF CONTAMINATED SURFACE SOIL IN THE PROCESS PLANT AREA, FOLLOWED BY REPLACING THE STABILIZED SOIL ONSITE; CAPPING THE APPROXIMATELY 5,800 SQUARE YARDS RESIDUALS AREA WITH AN ASPHALT CAP; CONDUCTING SOIL MONITORING; AND IMPLEMENTING INSTITUTIONAL CONTROLS INCLUDING DEED RESTRICTIONS. THE ESTIMATED PRESENT WORTH COST FOR THIS

REMEDIAL ACTION IS $1,586,000, WHICH INCLUDES AN ANNUAL O&M COST OF $43,000. PERFORMANCE STANDARDS OR GOALS; THE CLEAN-UP GOALS FOR SOIL CONTAMINANTS INCLUDING ARSENIC AND CARCINOGENIC PAHS ARE SET AT BACKGROUND LEVELS. ADDITIONAL SAMPLING AND ANALYSIS IS REQUIRED TO ASCERTAIN BACKGROUND LEVELS; HOWEVER, APPROXIMATE GOALS INCLUDE ARSENIC 10 MG/KG AND CPAHS 1.2 MG/KG.

Remedy:

THIS OPERABLE UNIT IS THE FIRST OF TWO OPERABLE UNITS FOR THE HALBY CHEMICAL SITE. OPERABLE UNIT 1 (OU1) FOR THE SITE ADDRESSES THE PRINCIPAL THREAT POSED BY SOIL CONTAMINATION WITHIN THE PROCESS PLANT AREA OF THE SITE. OPERABLE UNIT 2 (OU2) FOR THE SITE WILL ADDRESS CONTAMINATION OF THE AIR, GROUNDWATER, SEDIMENTS IN THE OUTFALL AREA AND TIDAL MARSH AREA, AND SEDIMENTS AND SURFACE WATER WITHIN THE LAGOON AND DRAINAGE DITCH. THE SOIL INSIDE THE PROCESS PLANT AREA (OU1) POSES AN UNACCEPTABLE HEALTH RISK TO WORKERS BECAUSE OF THE POTENTIAL FOR DIRECT CONTACT, INGESTION, OR INHALATION OF CONTAMINATED SOIL. THE SELECTED REMEDY INVOLVES THE EXCAVATION OF THE TOP 6 INCHES OF CONTAMINATED SURFACE SOIL IN THE PROCESS PLANT AREA FOLLOWED BY STABILIZATION AND REPLACEMENT. AN ASPHALT CAP IS TO BE PLACED OVER THE STABILIZED MATERIAL. THE MAJOR COMPONENTS OF THE SELECTED REMEDY INCLUDES THE FOLLOWING; * CONSOLIDATE ALL DEBRIS ON-SITE INTO ONE AREA * PERFORM A SOIL GRID SAMPLING ACTIVITY TO DETERMINE THE EXTENT OF REMEDIATION WITHIN THE PROCESS PLANT AREA * PERFORM A TREATABILITY STUDY TO IDENTIFY A PROPER STABILIZATION FORMULA * EXCAVATE THE TOP 6 INCHES OF CONTAMINATED SURFACE SOIL * STABILIZE EXCAVATED SOIL * BACKFILL STABILIZED SOIL * COVER THE STABILIZED SOIL WITH AN ASPHALT CAP * IMPLEMENT DEED RESTRICTIONS AND PUBLIC EDUCATION PROGRAMS * PERFORM LONG-TERM MONITORING AND MAINTENANCE.

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URL: http://www.epa.gov/superfund/sites/query/rods/r0391115.htm

Last Updated: January 14, 1999

EPA United States Environmental Protection Agency

Superfund

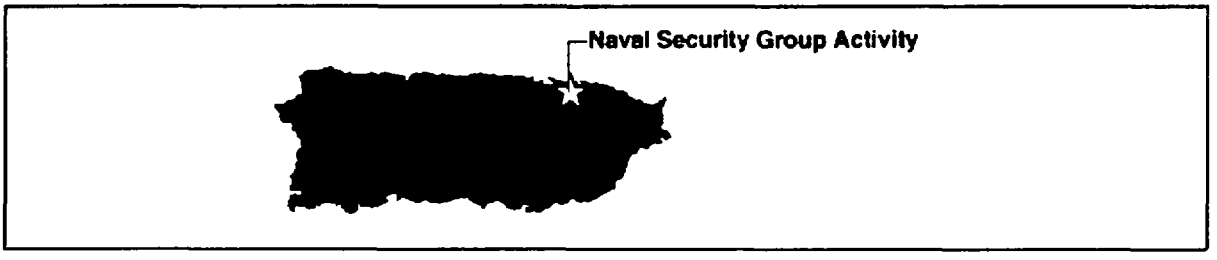
United States Environmental Protection Agency | Office of Emergency and Remedial Response (5201G) | May 1999

Returning Sites To Productive Use

Puerto Rico

Superfund Success Stories

- Naval Security Group Activity



Naval Security Group Activity

The 2,200-acre Naval Security Group Activity Superfund site lies 11 miles west of San Juan, Puerto Rico, and is divided into north and south tracts. This naval communications station operates a high frequency direction finding facility. Starting in the early 1950s, many areas on the station generated wastes, including paint, solvents, waste oil, battery acid, and pesticides, which were buried on the site. These hazardous wastes threatened groundwater, streams, coastal wetlands, and several areas that supported animal life, including endangered species. In 1989, EPA added the site to its list of hazardous waste sites needing cleanup. The Navy cleaned up the soil and water around the former pest control shop, and installed a four-inch thick asphalt cap over an 11,000-square foot area of the site. Completed in April 1997, the cap is now used as a parking lot for the station.

For More Information

To learn more about the positive economic, environmental, and social impacts that have occurred at individual recycled Superfund sites, please write to reuse.info@epa.gov , call the Superfund Hotline at

800-424-9346 or (703) 412-9810 (Washington, DC area), or contact:

Melissa Friedland
Office of Emergency and Remedial Response
U.S. Environmental Protection Agency
(703) 603-8864

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URL: http://www.epa.gov/superfund/programs/recycle/briefs/pr_brief.htm
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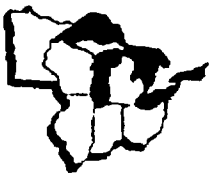
EPA **Environmental NEWS RELEASE**



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No. 99-OPA354

EPA: TRI-COUNTY CLEANUP STOPS FOR WINTER

U.S. Environmental Protection Agency (EPA) Region 5 said today that cleanup at the Tri-County/Elgin Landfills (IL) Superfund site will stop for the winter. The site has been secured to protect Brewster Creek from any erosion that may result from rain or snowfall.

The 66-acre site includes two adjacent landfills near the junction of Cook, DuPage, and Kane Counties, IL. Prior to the 1940's, the Tri-County Landfill was part of a gravel mining operation , then became a sand and gravel mining operation in the 1950's, and developed into a solid waste landfill from 1968 to 1976.

During the 1999 field construction season, the following activities on the Tri-County Landfill portion of the site (about 46 acres) were completed:

* Cleared all trees and vegetation;

* Excavated contaminated soils and sediments from the wetland area;

* Graded and blocked out site surface to drainage specifications;

* Installed landfill gas extraction system;

* Installed and replaced monitoring wells;

* Completed seeding and erosion control in the drainage swales; and

* Placed an asphalt cap on the Elgin-Wayne portion of the site (Waste Management transfer station).

Work will resume next spring at the Tri-County portion of the